M/027/007

JUMBO MINING COMPANY
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October 29, 1996
File: JMC10296

Mr. Don Ostler, P.E.
Director
Division of Water Quality
Dept. of Environmental Quality
P.O. Box 144870
Salt Lake City, Utah 84114-4870

Via Fax and Mail

Dear Mr. Ostler:

Subject: Jumbo Mining Co. Amended Plan of Operations, 9/16/96
Your letter dated Oct 11, 1996 to Rex Rowley

A copy of subject letter was delivered to Jumbo Mining Co. on October 26th, and we have the following comments thereon.

1) In your second paragraph, you state that " We have had information that the existing leach pads have caused a discharge of pollutants to the shallow perched ground water zone at the site since 1990."

We are not aware of any evidence of discharge of pollutants above the permit rinsing levels, and would appreciate your sharing this information with us so that we may specifically address it. To the contrary, there has been considerable evidence submitted to all of the regulatory agencies which, we contend, provides concrete evidence that there has been no

discharge of pollutants into the shallow perched saturated zone, since 1989 or 1990. As shown in the attached chart, the levels of pollutants have steadily declined since 1989.

2) Contrary to the assertions of your third paragraph, considering that all significant pollutants are below drinking water maximum concentrations, or otherwise consonant with regional background water analyses, we believe that we have submitted ample evidence that it would not be necessary to stop the discharge of contaminants. There is no evidence that there has been any discharge of any contaminants significant to the region and it is difficult to stop something that has not occurred!

It should be noted that the regional background analyses are high for both chlorides and nitrates, the only exceptions to drinking water standards in the most recent monitoring well samples. Please note that Sherri Wysong from the BLM witnessed this latest sampling and had no problems with our sampling methods or the chain of custody of the samples through the analytical laboratory.

The steady decrease in the concentrations of these two substances (nitrate and chlorides) over the years since 1989/1990 is a further indication that there had been no significant discharges of contaminants from the heaps into the perched saturation zone. Neither is a volatile compound, and both are expected to be above background levels in the heap leach system (the chlorides from evaporative concentration of the already high leaching water and the nitrates from the use of ANFO, ammonium nitrate fertilizer, for blasting in the mines, as well as from the use by the BLM of fire retardants in the area drained).

Further on your third paragraph, you have indicated concern that "A more highly concentrated solution could be discharged through holes in the bottom liner."

a)The heaps have installed beneath them a leak detection system, which has never shown any leakage since 1989/1990.

b) The recent sampling of runoff from heaps (see table attached) is strong evidence that the heaps are not discharging WAD cyanide and

metals above drinking water standards. The DWQ statement that the runnoff into the pregnant solution pond may not be representative for the entire heap may be true where the runnoff is mainly from the ditches and high permeability side slopes of the heaps. However, runoff two days after a storm should be from less permeable zones and should be representative for the heaps, according to current BLM guidelines for evaluating leakage from heaps.

c) Since the analytical data from the three heaps revealed similar concentrations, the contention that other heaps might be different is hard to justify. This evidence, plus the fact that the perched saturated zone underlies 75% of the heaps and has shown no indication of leakage, should be probative that no ground water contamination has taken place, even if there were useable ground water in the area! One could speculate that there has been some leakage that has been so small that the perched saturation zone pollutant concentrations have not been significantly increased. If so, is this speculation sufficient, in the face of so much contrary evidence, to justify major remedial expenditures such as have been suggested? We do not believe so!

3) Also in your third paragraph you refer to certain "deteriorated conditions of the facilities at the Drum Mine site". For the record, let me state that we have spent hundreds of thousands of dollars over the past five years to maintain these facilities. We have chosen not to repair the exposed PVC ditch liners on the old heaps for the obvious reason that since 1990 (1988 for some of them) none of them have been used, and there is no expectation that they will *ever* again be used. The only justification for maintaining them would come from evidence that these ditches might carry contaminated drainage from the heaps to the ponds. However, repeated sampling of the infrequent rainstorm drainage has failed to show any contaminants of concern (see attached chart) being carried by these ditches.

4) Finally in your third paragraph you point out that the perched saturation zone does not underlie all of the heaps. We contend that the evidence shows that it does underlie six of the nine heaps, that is, all of the heaps except for No.'s 2 & 3 LG and No. 7HG. With respect to two of three heaps (2LG and 7HG), monitoring holes have been drilled to intersect the

down slope of impermeable shale beds which underlie these heaps. No leakage was detected in these holes when they were drilled and electrically logged within a short time after the sprinkling of the heaps was stopped. In any event we contend that the repeated sampling of the perched saturation zone which underlies six out of the nine heaps in question, over a six year period, is ample evidence to demonstrate the absence of significant leakage from any of these heaps.

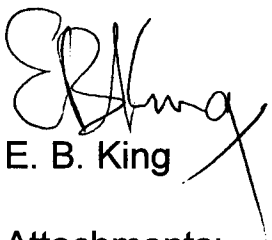
5) With respect to the conjecture that the water in the bottom of the monitoring holes may not be representative with respect to cyanide concentrations, we would like to point out that the most recent sampling, as well as prior sampling, was done only after the holes were pumped out and allowed to recharge. Considering this, it is unlikely that any significant volatilization of cyanide from the freshly recharged water from the underground saturation zone has occurred. The evidence is that most all of the trace of cyanide which found its way into the perched saturation zone prior to 1988 was the non-volatile, non-toxic, complexed species. Further, all other non-volatile elements have shown steady declines in concentration over the last six years, at about the same rate as has cyanide. We believe that this is evidence that these monitoring hole samples are also representative with respect to cyanide.

6) Regarding the conclusions contained in your second to last paragraph, we must disagree completely, based on the contrary evidence cited above. There is no creditable evidence of contamination since prior to 1989, and we have presented lots of concrete evidence to the contrary. Sampling of the perched saturation zone underlying 75% of the heaps has shown that the water contained therein meets regional background or drinking water specifications except for nitrates and chlorides. Both of these are above drinking water standards in this area, and neither would likely have any impact on the known useable ground water, located seven miles away, and nearly 1500 feet lower in elevation from the mine site.

In conclusion, we contend that unsubstantiated presumptions and speculations do not provide a reasonable basis for the destruction of infrastructures valued at more than $750,000, as is implicit in the reclamation of this facility. We further resent the implication that Jumbo has ever contributed to any "bad history" with respect to this property!

Whatever leakage of contaminants that might have occurred from these heaps clearly happened before Jumbo took over the property in late 1988.

Sincerely,



E. B. King

Attachments:

1) Diagram of Drum Mine heap discharge monitoring system.
2) 1991-1996 monitoring hole data.
3) Storm runoff sampling results, 9/18/96.

cc: Dave Hartshorn, Delta
ZL Samay, Esq.

Rex Rowley, BLM Filmore (fax & mail)
Wayne Hedberg, DOGM
Tom Mitchell, AG
Central Utah Health Dept.
Roger Foisey, District Engineer

DRUM MINE
HEAP DISCHARGE MONITORING

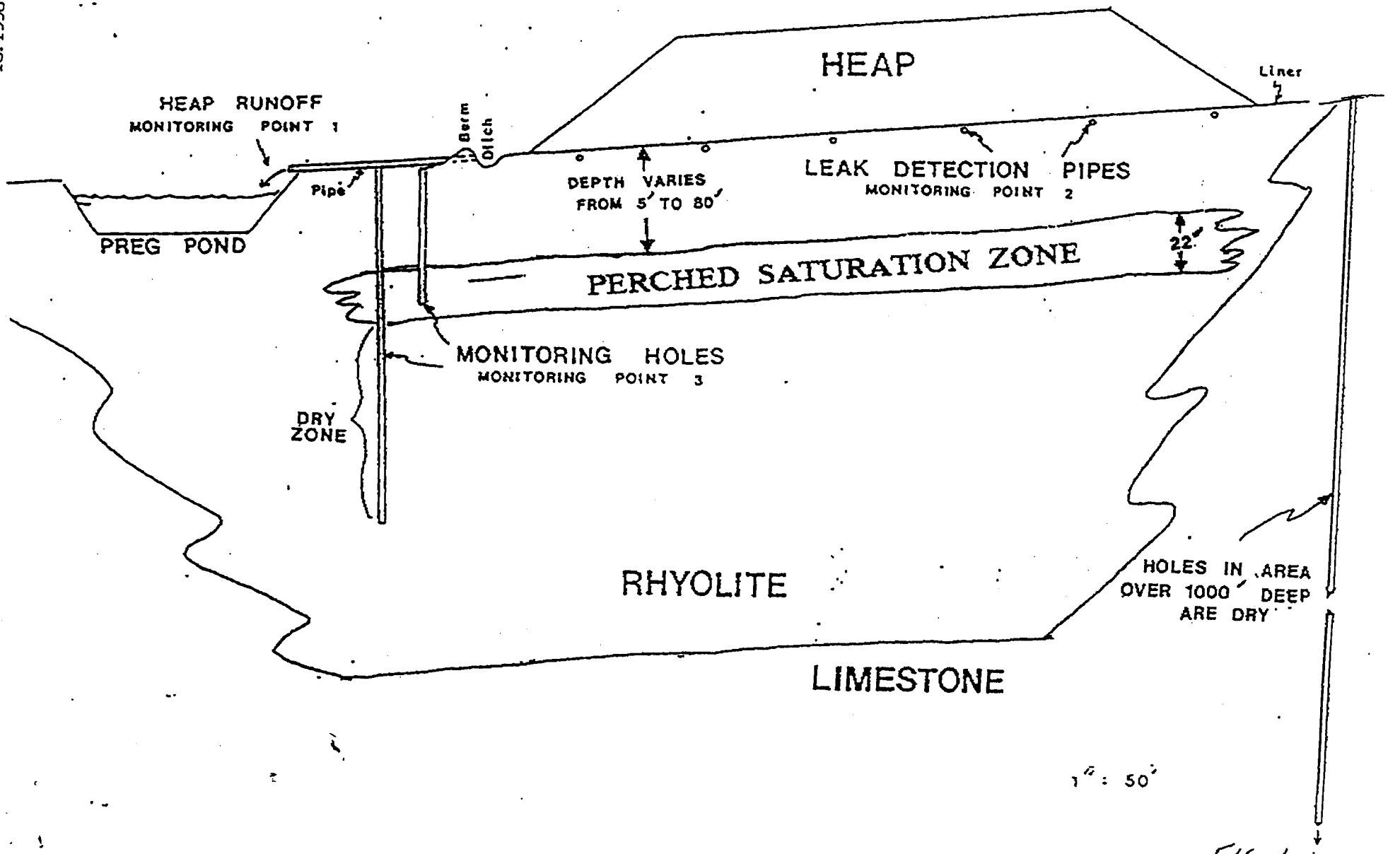


FIG. 1

COMPARISON OF ANALYTICAL DATA FROM MONITORING HOLES IN THE PERCHED AQUIFER AT THE DRUM MINE

	MH 7 (1991)	MH 7 (1995)	MH 7 (1996)	MH 8 (1991)	MH 8 (1995)	MH 8 (1996)
As	0.093	0.006	<0.005	0.015	<0.005	Dry Hole
Cd	<0.005	0.008	0.013	<0.005	0.004	
Cr	0.240	0.020	0.020	<0.005	0.020	
Pb	0.310	<0.050	0.090	<0.100	<0.050	
Hg	<0.0002	<0.001	<0.001	<0.002	<0.001	
Chloride	4,600	3,800	4,600	3,720	2,600	
Total CN	0.170	0.081	0.049	0.210	0.170	
WAD CN	NA	0.015	<0.005	NA	0.026	
Nitrate	NA	7.000	8.500	NA	13.0	
TDS	10,622	8,700	9,100	9,730	6,700	

	MH 17 (1991)	MH 17 (1995)	MH 17 (1996)	MH 33 (1991)	MH 33 (1995)	MH 33 (1996)
As	0.012	<0.005	<0.005	0.037	<0.005	<0.005
Cd	<0.005	<0.004	<0.005	<0.005	<0.004	<0.005
Cr	0.020	0.010	0.010	0.090	0.010	0.01
Pb	0.028	<0.050	<0.050	<0.100	<0.050	<0.050
Hg	0.0006	<0.001	<0.001	<0.0002	<0.001	<0.001
Chloride	3,080	1,700	N/A	2,500	1,400	1500
Total CN	0.210	0.160	0.120	0.440	0.150	0.11
WAD CN	NA	0.019	0.018	NA	0.011	0.007
Nitrate	NA	19.0	N/A	NA	38.0	36.0
TDS	8,196	6,300	N/A	7,890	6,500	6800

	MH 34 (1991)	MH 34 (1995)	MH 34 (1996)	PREGNANT POND 996 PP	DRINKING WATER STANDARD
As	0.012	<0.005	<0.005	0.042	0.050
Cd	<0.005	<0.004	0.005	<0.004	0.010
Cr	0.030	0.020	0.020	<0.01	0.050
Pb	<0.100	<0.050	<0.05	<0.050	0.050
Hg	0.0008	<0.001	<0.001	<0.001	0.002
Chloride	2,780	1,700	1,800	2,000	250
Total CN	0.440	0.220	0.21	0.012	0.200
WAD CN	NA	0.029	0.068	0.012	0.200
Nitrate	NA	31.0	31	11.0	10.0
TDS	8,296	6,700	6,600	5,100	2,000

Concentrations are in mg/l

ANALYTICAL RESULTS OF HEAP RUNOFF AFTER A MAJOR RAINSTORM FROM HEAPS 1, 2, AND 4/5 AT THE DRUM MINE

Sampled September 18, 1996

	HEAP 1	HEAP 2	HEAP 4/5	DRINKING WATER STANDARD
As	0.040	0.031	0.035	**0.050**
Cd	<0.004	<0.004	0.004	**0.010**
Cr	<0.010	<0.010	0.010	**0.050**
Pb	<0.050	<0.050	<0.050	**0.050**
Hg	<0.001	<0.001	<0.001	**0.002**
Chloride	1,900	1,200	2,700	**250**
Total CN	0.360	0.220	0.220	**0.200**
WAD CN	0.140	0.048	0.052	**0.200**
Nitrate	67	45	86	**10**
TDS	4,900	3,100	6,700	**2,000**

COMMENTS:

1. Samples were collected from heap runoff two days after a major rainstorm which occurred on September 16, 1996. Only heaps 1,2, and 4/5 had runoff from drainage from the interior of the heaps. All other heaps absorbed the rainfall and no runoff occurred.
2. During and after the rainfall, no leak detection pipes from beneath heaps contained any water, which indicates no leaks occurred through the liner.
3. The estimated amount of rainfall was greater than 1 inch. Approximately 400,000 gallons of water flowed into the preg pond from the heaps.
4. Two days after the storm, the amount of discharge flowing into the preg pond from the interior of heaps 1, 2 and 4/5 was 10 gpm.
5 The runoff represented the final draindown of the heaps after a major rainstorm.